

Although it is theoretically attractive, its failure to satisfy these two important details of the hybrid vigor situation has condemned it.

JONES³ has ingeniously modified the dominance hypothesis so as to avoid these difficulties. At first consideration his theory seems to be clearly the most reasonable explanation of hybrid vigor that has yet been presented, although in time it may encounter destructive criticism. The argument is essentially the same as that for the old dominance hypothesis, with the following important modification. Assume that one parent contains the dominant determiner *A*, linked with the recessive *c*; on another chromosome it contains *B* linked with *d*. The total formula may be expressed conveniently as *Ac, Bd*. The other parent has the formula *aC, bD*. The hybrid is more vigorous than either parent because it combines all 4 dominant determiners. The attractiveness of this scheme is that it escapes the objections that were made to the older dominance hypothesis: (1) the fact that 100 per cent hybrid vigor cannot be fixed is quite in accordance with JONES' scheme, for it is obviously impossible to isolate a homozygous race, combining the 4 dominant determiners, *A*, *B*, *C*, and *D* (unless crossing over occurs); (2) a simple mathematical demonstration will show that the distribution of F_2 individuals (with respect to hybrid vigor) is quite what it should be, represented by a symmetrical curve, similar to the curve of probabilities. In fact, this new theory, "the dominance of linked factors," seems altogether sound. We should reasonably expect that each chromosome would contain one or more dominant determiners (conducive to vigor) linked with one or more recessives. In this day of factors and determiners such a hypothesis is quite appropriate. It may be, however, that in the future such a phenomenon as hybrid vigor may be explained on the basis of the stabilities and reactivities of the constituents of specific protoplasts.—MERLE C. COULTER.

Taxonomic notes.—BLAKE⁴ has published a fascicle of papers containing descriptions of new species. In the paper dealing with Compositae new species are described in *Aphanostephus*, *Diplostephium*, *Verbesina*, *Liabum*, and *Cirsium*. Collections from Venezuela and Curaçao contain new species in the following genera: *Ruprechtia* (2), *Atriplex*, *Bauhinia*, *Croton* (2), *Maytenus*, *Zizyphus*, *Vismia*, *Hecatostemon* (a new genus of Flacourtiaceae), *Passiflora*, *Jacquinia*, *Bumelia*, *Aspidosperma*, *Plumeria*, *Marsdenia* (2), *Lycium*, *Tabebuia*, *Dianthera*, *Oxycarpha* (a new genus of Compositae), *Simsia*, and *Verbesina*. The new species from Oaxaca are referred to *Iresine* (2), *Amyris*, *Guarea*, *Tri-*

³ JONES, D. F., Dominance of linked factors and heterosis. *Genetics* 2:466-479. 1917.

⁴ BLAKE, S. F., II. Further new or noteworthy Compositae. *Contrib. Gray Herb. N.S.* no. 53. pp. 23-30. 1918.

———, New Spermatophytes collected in Venezuela and Curaçao by Messrs. Curran and Haman. *Ibid.* pp. 30-55.

———, New plants from Oaxaca. *Ibid.* pp. 55-65.

chilia, *Comocladia*, *Astronium*, *Myginda*, *Homalium*, *Schismocarpus* (a new genus of Loasaceae), *Cuphea*, *Ardisia*, and *Bouvardia*.

BRITTON⁵ has described a new *Scirpus* (*S. Congdoni*) from California, which is the species from the Pacific states heretofore called *S. atrovirens*.

Miss BURLINGHAM⁶ has described 4 new species of *Russula* from Massachusetts.

FARWELL⁷ has described 17 new varieties of Michigan plants, distributed among 9 families; and has also published a list of rare or interesting plants from the state.

FERNALD⁸ has described a new species of *Littorella* (*L. americana*), one of our rarest plants, and heretofore referred to the European *L. uniflora*. The same author,⁹ as a result of his study of *Epilobium* from various regions, has published a number of new varieties and combinations and discussed several critical forms.

GREENMAN,¹⁰ in continuation of his monograph of *Senecio*, has presented TOMENTOSI, recognizing 35 species, 2 of which are new, occurring in California and Colorado. The descriptions are accompanied by a full bibliography and liberal citations of exsiccatae, especially such as occur in American herbaria.

JOHNSTON and BRUNER¹¹ have described a new species of *Phyllachora* (*P. Roystoneae*) found on the leaves of the royal palm (*Roystonea regia*) growing in Cuba. It is described as forming "conspicuous black, carbonaceous masses several centimeters long on the midribs of the leaves."

MACBRIDE¹² has described new species in *Tricyrtis*, *Atriplex*, *Lotus*, *Lomatium*, *Lycium*, and *Cirsium*, and presented the results of his studies of numerous other forms.

MURRILL,¹³ in continuation of his studies of the Agaricaceae of tropical North America, has begun the presentation of the subtribe Agaricanae,

⁵ BRITTON, N. L., An undescribed *Scirpus* from California. *Torreyia* 18:36. fig. 1. 1918.

⁶ BURLINGHAM, GERTRUDE S., New species of *Russula* from Massachusetts. *Mycologia* 10:93-96. 1918.

⁷ FARWELL, O. A., New species and varieties from Michigan. *Mich. Acad. Sci. Rep.* 1917. pp. 247-262.

⁸ FERNALD, M. L., The North American *Littorella*. *Rhodora* 20:61, 62. 1918.

⁹ ———, *Epilobium*, etc. *Rhodora* 20:1-10, 29-39. 1918.

¹⁰ GREENMAN, J. M., Monograph of the North and Central American species of the genus *Senecio*. Part II. *Ann. Mo. Bot. Gard.* 5:37-108. pls. 4-6. 1918.

¹¹ JOHNSTON, J. R., and BRUNER, S. C., A *Phyllachora* of the royal palm. *Mycologia* 10:43, 44. pl. 2. 1918.

¹² MACBRIDE, J. FRANCIS, New or otherwise interesting plants, mostly North American Liliaceae and Chenopodiaceae. *Contrib. Gray Herb. N.S.* no. 53. pp. 1-22. 1918.

¹³ MURRILL, WILLIAM A., The Agaricaceae of tropical North America. VII. *Mycologia* 10:15-35. 1918.

recognizing 14 species, 6 of which are included in the present contribution. New species are described in *Atylospora* (11), *Psathyrella* (5), *Psilocybe*, and *Campanularius*. In a later paper the same author¹⁴ has described 28 new species from the same region in the following genera: *Drosophila* (8), *Hypholoma*, *Gomphidius*, *Stropharia* (2), *Agaricus* (13), *Coprinus* (4).

MILLSPAUGH and SHERFF¹⁵ have discovered that the species of *Xanthium* are in great confusion, and have described 5 new species, from Vermont (*X. leptocarpum*), New York (*X. arcuatum*), North Carolina (*X. cylindricum*), and Texas (*X. crassifolium* and *X. acutilobum*). In the same paper a new species of *Solidago* (*S. emarginata*) from Illinois is described.

SMITH and SMALL¹⁶ have described a new genus (*Cavea*) of Compositae from India, in the East Himalaya region, belonging to the Inuloideae. It is an extreme alpine form, its structure associating it with *Pluchea*, but its appearance suggesting *Saussurea* or *Berardia*.

STEPHANI,¹⁷ in continuation of his *Species Hepaticarum*, has completed *Metzgeria* and presented 25 other genera, ending with *Plagiochila*. A new genus (*Kormickia*) is described and 121 new species distributed among 9 genera. The largest genus is *Plagiochila* with 187 species, 92 of which are new. The remaining 29 new species are distributed among the following genera: *Metzgeria* (11), *Symphyogyna* (3), *Funicularia*, *Solenostoma*, *Jungermannia* (2), *Jamesoniella* (6), *Anastrophyllum* (3), *Lophozia* (2).

WALTON¹⁸ has described a new genus (*Eutetramorus*) of algae secured from the plankton of a pond on the campus of Ohio State University at Columbus. It belongs to the Coelastraceae (Protococcoideae), the colony consisting of 16 cells.

ZELLER and DODGE¹⁹ have monographed the genus *Rhizopogon* in North America, recognizing 12 species, 6 of which are described as new. In addition, 15 species are presented which have not as yet been found in North America, but may be discovered later. Among these "extra-limital" species 2 are described as new.—J. M. C.

¹⁴ MURRILL, WILLIAM A., The Agaricaceae of tropical North America. VIII. *Mycologia* 10:62-85. 1918.

¹⁵ MILLSPAUGH, C. F., and SHERFF, E. E., New species of *Xanthium* and *Solidago*. *Publ. Field Mus. Nat. Hist.* 4:1-7. pls. 1-6. 1918.

¹⁶ SMITH, W. W., and SMALL, JAMES, *Cavea*, a new genus of the Compositae from the East Himalaya. *Trans. and Proc. Bot. Soc. Edinburgh* 27:119-123. pl. 5. 1917.

¹⁷ STEPHANI, FRANZ, *Species Hepaticarum* 6:49-176. 1917. 1918.

¹⁸ WALTON, L. B., *Eutetramorus globosus*, a new genus and species of algae belonging to the Protococcoidea. *Ohio Jour. Sci.* 18:126-128. 1918.

¹⁹ ZELLER, SANFORD M., and DODGE, CARROLL W., *Rhizopogon* in North America. *Ann. Mo. Bot. Gard.* 5:1-30. pls. 1-3. 1918.